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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/932,201 | 08/17/2001 | Jennifer Ambrose | M8540/250222 | 4944 |

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| EXAMINER |
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TAMAI, KARL I

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| ART UNIT | PAPER NUMBER |
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2834

DATE MAILED: 12/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 09/932,201 | AMBROSE ET AL. | |
| | Examiner | Art Unit | |
| | Tamai IE Karl | 2834 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 October 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) See Continuation Sheet is/are pending in the application.
- 4a) Of the above claim(s) 22,24,25,27,28,33 and 34 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,5,8,10,12,13,17-22,24,25,27,30,31 and 33-38 is/are rejected.
- 7) ☒ Claim(s) 39 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. This application contains claims 22, 24, 25, 27, 28, 33, and 34 drawn to an invention nonelected with traverse in Paper dated 1/21/2003. A complete reply to the final rejection must include cancelation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Drawings

2. The drawings were received on 10/24/2003. These drawings are approved.
3. The objection to the drawings under 37 CFR 1.83(a) is withdrawn.
4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the carbon commutator segments chemically bonded to the core or the magnet must be shown or the features canceled from the claim 18. No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

5. The rejection of Claims 1, 2, 4-21, 30-32, 35 and 36 under 35 U.S.C. 112, first paragraph, is withdrawn.

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claim 18 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. The specific does not include a written description of the carbon commutator segments chemically bonded to the core or the magnet.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1, 2, 4, 19, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishimura et al. (Nishimura)(JP 11-308812) and Vig et al. (Vig)(US 6,278,269). Nishimura teaches a commutator injected molded around an annular magnet and a shaft to provide rotor information. It is inherent that there is a magnetic sensor to cooperate with the sensor magnet. Nishimura does not teach a chemical bond between the commutator and the electrically insulating support. Vig teaches the

connection between the permanent magnet and the electrically insulating, plastic support can be a chemical bond (col. 4, line 65) for the purpose of reduce expense, easy manufacture, and tight tolerance (col. 1m, lines 42-50). It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the commutator of Nishimura with a chemical bond between the magnet and the molded support to provide an easy and inexpensive way to assemble the magnet and the support.

10. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nishimura et al. (Nishimura)(JP 11-308812) and Vig et al. (Vig)(US 6,278,269), in further view of Adler (US 5,850,141). Nishimura and Vig teach every aspect of the invention except the sensor being a variable reluctance sensor. Adler teaches the equivalence of the hall sensor and the variable reluctance sensor for determining rotor speed. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the commutator of Nishimura and Vig with the sensor being a variable reluctance sensor to determine the rotor speed with a passive sensor, and because it is within the ordinary skill in the art to choose between known equivalents.

11. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nishimura et al. (Nishimura)(JP 11-308812) and Vig et al. (Vig)(US 6,278,269), in further view of Schechinger et al. (Schechinger)(FR 2 663 798). Nishimura and Vig teach every aspect of the invention except the sensor being a hall sensor. Schechinger

teaches the sensor is a Hall sensor. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the commutator of Nishimura and Vig with the sensor being a Hall sensor to detect the speed and rotation of the rotor.

12. Claims 35, 36, 10, 12, 13, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishimura et al. (Nishimura)(JP 11-308812) and Vig et al. (Vig)(US 6,278,269), in further view of Kawashima (US 4,678,616). Nishimura teaches the sensor magnetic is a continuous ring 2 round with the commutator core 4 is molded. Vig teaches when the magnet plastic and support is thermosetting (col. 4, line 64) are both plastic, then they can be chemically bonded (col. 4, line 34). A plastic magnet being non-electrically conductive. Nishimura and Vig teach every aspect of the invention except the magnet being a powder resin. Kawashima teaches thermosetting powder resin magnets with strontium or barium ferrite magnets are commonly used in magnetic devices. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the commutator of Nishimura and Vig with the powder magnets of Kawashima because the magnets are reliable and resist chipping, and because the plastic magnet can be melted as taught by Vig for a strong chemical bond and because selection of the material based on intended use is within the ordinary skill of the art (See *In re Leshin*, 125 USPQ 416).

13. Claims 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishimura et al. (Nishimura)(JP 11-308812), Vig et al. (Vig)(US 6,278,269) and

Kawashima (US 4,678,616), in further view of Marsal (US 2,645,732). Nishimura, Vig, and Kawashima teach every aspect of the invention except the conductive commutator shell being carbaceous. Nishimura teaches the commutator and magnet insert molded, which would inherently chemically bond the core and commutator. Marsal teaches the commutator are carbon because carbon forms a strong bond with the resin when heated (col. 2, line 4). It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the commutator of Nishimura, Vig, and Kawashima with the commutator being carbaceous to provide a strong connection with the resin core, as taught by Marsal.

14. Claims 5, 8, and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishimura et al. (Nishimura)(JP 11-308812), Vig et al. (Vig)(US 6,278,269), and Kawashima (US 4,678,616), in further view of Kageyama et al. (Kageyama)(US 6,369,484). Nishimura, Vig, and Kawashima teach every aspect of the invention except the commutator segments being metal/copper with anchors. Kageyama teaches a thermosetting core 12 and a copper shell 31, with radial anchors 21. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the commutator of Nishimura, Vig, and Kawashima with the anchors and metal commutator segments of Kageyama to be inexpensive and reliable.

15. Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nishimura et al. (Nishimura)(JP 11-308812), Vig et al. (Vig)(US 6,278,269), and

Kawashima (US 4,678,616), in further view of Uchiyama (JP 11-252,866). Nishimura, Vig, and Kawashima teach every aspect of the invention except the magnet being mounted to the face of the commutator. Uchiyama teaches an annular magnet mounted to the face of the commutator. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the commutator of Nishimura, Vig and Kawashima with a continuous ring magnet mounted to the face of the commutator as in Uchiyama to provide a small thickness in the motor, and because the annular magnets suggest a continuous ring.

Allowable Subject Matter

16. Claim 39 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

17. Applicant's arguments filed 10/24/2003 have been fully considered but they are not persuasive.

The Applicant's argument that Vig teaches a magnetic structure is not persuasive. Vig teaches two ways to connect a magnet 14 to a plastic support 18: interference fit and chemical bond (col. 3, line 52). It is within the ordinary skill in the art to choose between known equivalent for securing the magnet to the support. The Applicant's argument that the entire magnet and support must be inserted in to

Nishimura is not persuasive. Nishimura clearly teaches an electrically conductive commutator to which a magnet is mounted. The combined teachings of Nishimura and Vig suggests that the magnet can be mounted by interference or chemical bonds (See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986) teaching one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references). The Applicant's argument that there is no teaching of mounting a magnet to a commutator core by chemical bonds is not persuasive because the commutator core of Nishimura is resin, which is the same as the plastic core/support 18 of Vig.

The Applicant's arguments regarding the narrow teaching of the core 18 of Vig being magnetically permeable is not persuasive. Vig clearly teaches that there are two ways to mount the magnet 14 to plastic support 18, so the combined teachings of Nishimura and Vigs teaches that commutator magnet can be mounted by either interference or chemical bonding. (see *In re Keller*, supra). The Applicant's argument that the concentrator of Vig is electrically conductive is not persuasive. The inclusion of electrically conductive particles does not make the support of Vig electrically conductive, only magnetically conductive, because the particles are still embedded in plastic. Also the commutator core of Vig is resin which is electrically insulating. The examiner notes that the bond between the magnet and support of Vig is Not dependent upon the magnetic particles.

The Applicant's argument that the dependent claims are allowable because Nishimura and Vig do not teach the limitations of claims 1 is not persuasive for the reason discussed above.

Conclusion

18. Applicant's amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karl I.E. Tamai whose telephone number is (703) 305-7066 until February 1, 2004, or at (571) 272-2036 after February 2, 2004.

The examiner can be normally contacted on Monday through Friday from 8:00 am to 4:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Nestor Ramirez, can be reached at (703) 308-1371. The facsimile number for the Group is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.

Karl I Tamai
PRIMARY PATENT EXAMINER
December 11, 2003



KARL TAMAI
PRIMARY EXAMINER